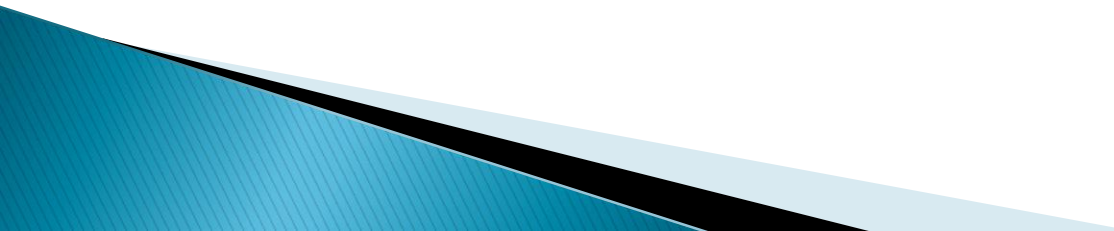


Common Core Standards for Mathematical Practice

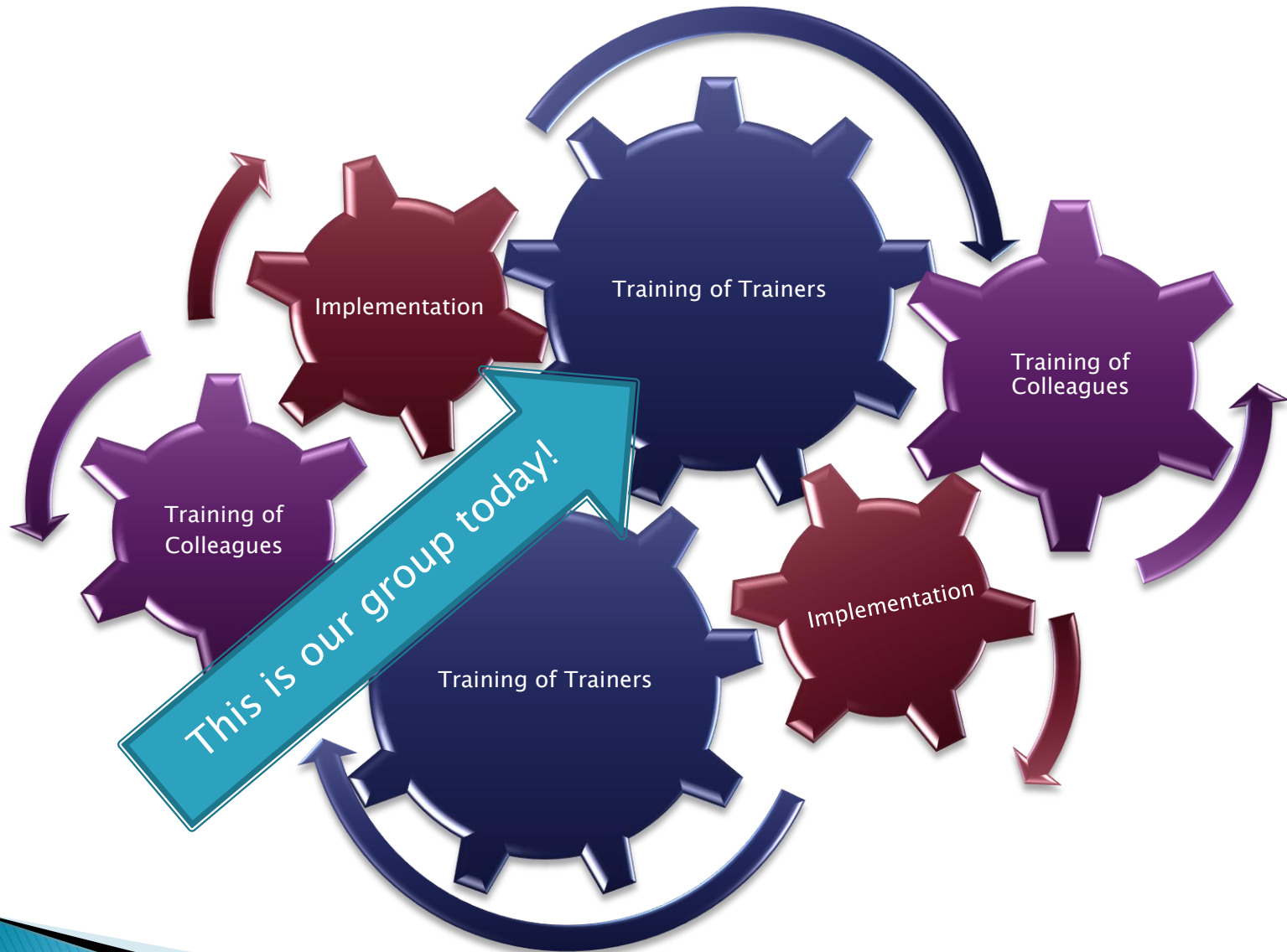
Milford Public Schools

November 27, 2012

Objectives

- ▶ Build cohort capacity to function as peer leaders, ready to present content to teacher teams on early release days and support teacher implementation in respective schools
 - ▶ Develop understanding of Standards for Mathematical Practice and implications for planning & instruction
 - ▶ Examine classroom strategies for developing said practices in elementary, middle and high school students
- 

Practice informing PD informing Practice



Cycle of Development

- ▶ **Training of Trainers: Cohort meets prior to district early release dates**
 - 2 Standards for Mathematical Practice per session
 - Development of teacher leadership capacity
- ▶ **Teacher Leaders present/share PD with colleagues at early release session**
 - Teacher Leaders will share new learning with their peers
 - Teachers will experiment with new strategies and collect artifacts
- ▶ **Monitoring and Adjusting: Cohort meets again**
 - Monitor and adjust teacher leadership skills
 - Examine resulting classroom artifacts from implementation of featured Standards for Mathematical Practice.

Grouping the SMPs

1. Make sense of problems and persevere in solving them

6. Attend to precision

2. Reason abstractly and quantitatively

3. Construct viable arguments and critique the reasoning of others

4. Model with mathematics

5. Use appropriate tools strategically

7. Look for and make use of structure.

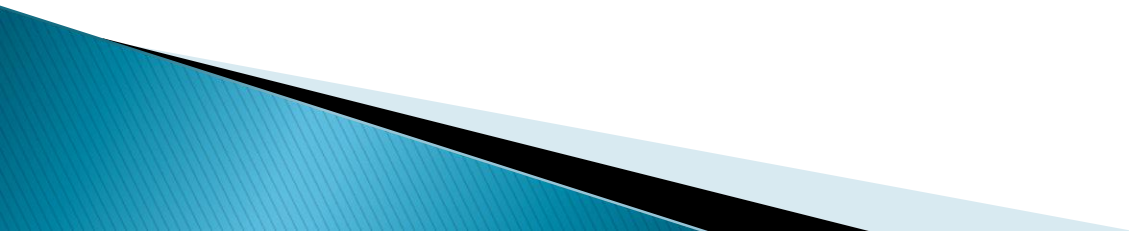
8. Look for and express regularity in repeated reasoning.

Reasoning and explaining

Modeling and using tools

Seeing structure and generalizing

Leading from the middle is a collaborative process that benefits the whole school/district.



Leading “from the middle”

“When given opportunities to lead, teachers can influence school reform efforts. Waking this sleeping giant of teacher leadership has unlimited potential in making a real difference in the pace and depth of school change.”

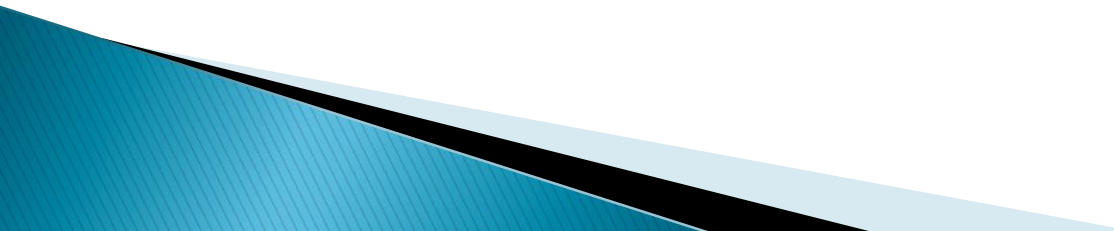
Katzenmeyer and Moller, *Awakening the Sleeping Giant: Helping Teachers Develop as Leaders*, 2001



Teacher Leadership

What is teacher leadership?

Charlotte Danielson defines it as:
“Skills demonstrated by teachers who continue to teach but who influence practices of other teachers and activities in other classrooms.”



Teacher Leadership

Perhaps the most important contribution that a teacher leader can make to school improvement is *to resist the temptation to become negative or cynical.*

Where negativity and cynicism abound, there is neither energy nor motivation for change.



Section I

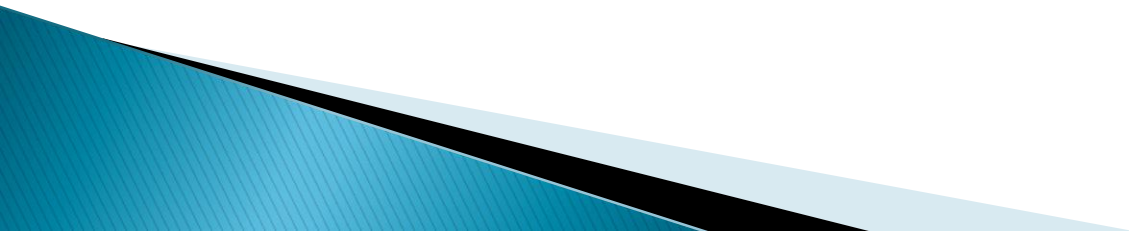
- ▶ Leading from the middle

Change Challenge

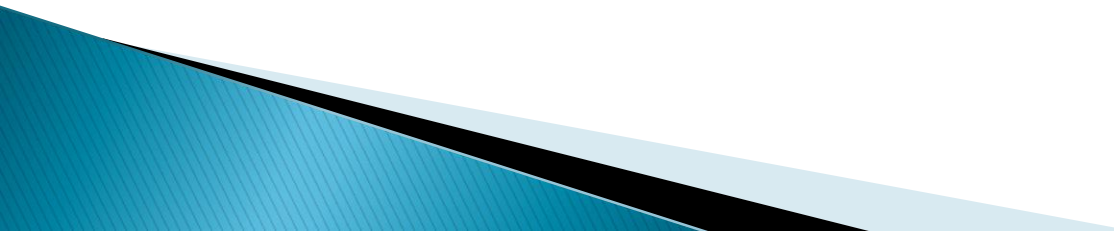
Let's experiment with change!

Group agreements:

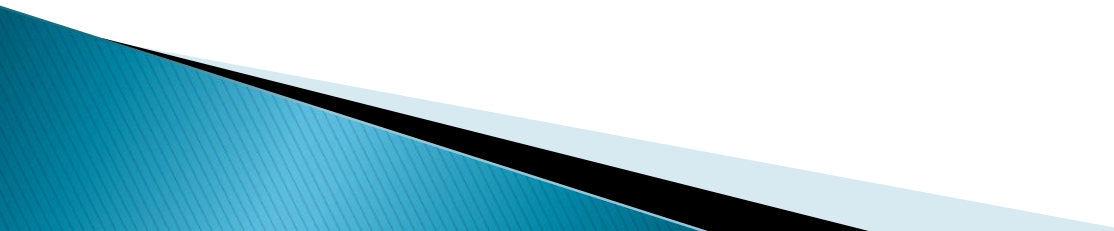
- ▶ Maintain the changes that will be made until the experiment is over.
- ▶ No one has to make changes that they feel uncomfortable with.



Change Challenge

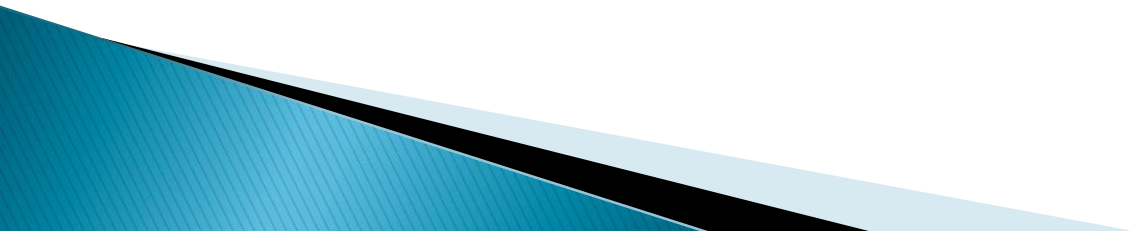
- ▶ Choose a partner and stand facing each other
 - ▶ Study your partner for 30 seconds
 - ▶ Turn your backs to each other
 - ▶ Make 5 changes to your physical appearance
 - ▶ Face your partner and identify as many changes as possible
 - ▶ Make TEN changes to your physical appearance
- 

Change Challenge

- ▶ How did you feel when you were being told to make so many changes?
 - ▶ Why are people resistant to making changes?
 - ▶ What can you do to make it easier on those you work with to accept necessary change?
- 

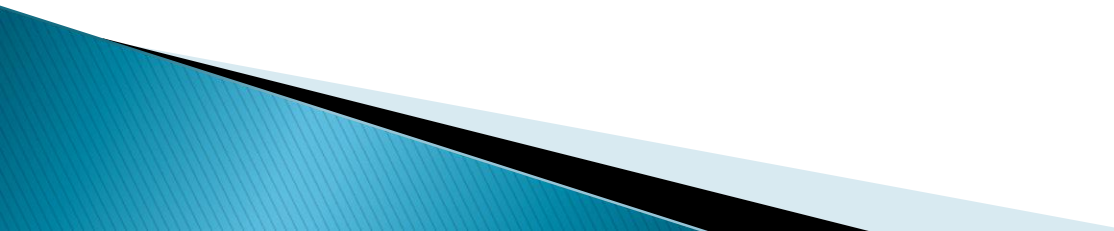
Revisiting your task...

- ▶ AKA, your “change challenge.”

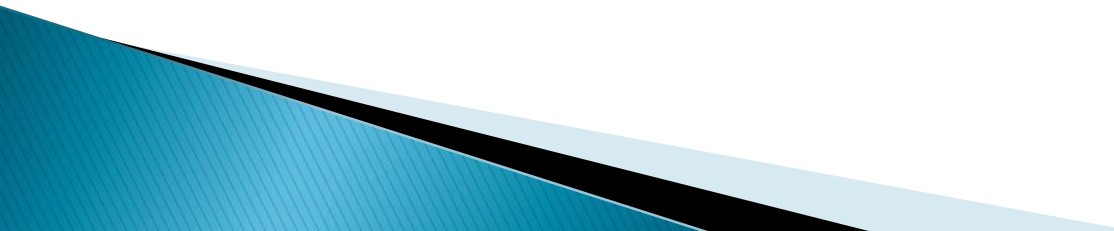


Teacher Leadership

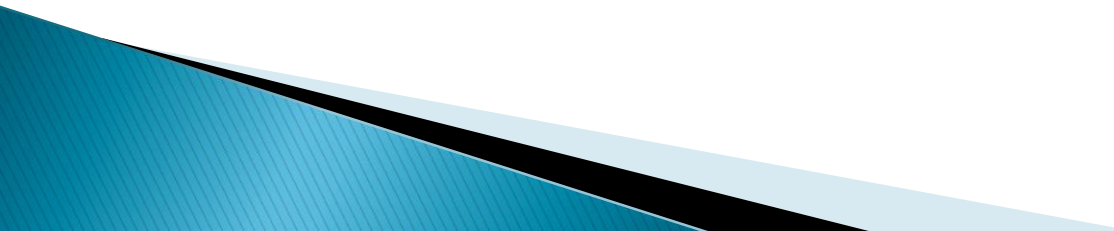
Your task:

- ▶ Present/share select SMPs with your colleagues during the last early release day
 - ▶ Implement some of the strategies and collect data/artifacts of successes and challenges
 - ▶ Support your colleagues as they try to do the same
 - ▶ Reconvene with cohort to debrief (11/28/12)
- 

Microlabs Protocol

- ▶ Work in triads with representatives from each level if possible
 - ▶ Assign person #1, #2, #3
 - ▶ Each person will have 2 minutes to respond to the question posed to the group.
 - ▶ If you are still sharing when time is called, you must stop.
 - ▶ If you finish sharing before time is called, the group must sit in silence for the remainder of the time.
- 

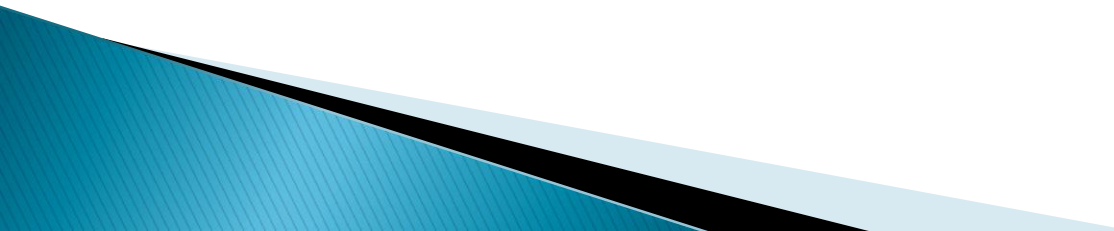
Debriefing the protocol

- ▶ What did you hear that was significant?
 - ▶ What key ideas or insights were shared?
 - ▶ How did this go for you? What worked well, and what was difficult? Why?
- 

Microlabs: Round Two!

- ▶ Each person has data to collect while listening to group members share.
- ▶ Do not disclose what you are watching/listening for

Debriefing the protocol

- ▶ How might your conversations have been different had we not used this protocol?
 - ▶ What are the advantages/disadvantages of using this activity? When would you use this protocol?
 - ▶ What would you want to keep in mind as someone facilitating this activity?
- 

Listening → Supporting

- ▶ Define “support” in the context of our work
- ▶ Define “listening” in the context of our work
- ▶ Let’s examine how to “listen”...

BMIRS:

Behavioral Manifestations of Internal Response States

Some ways that we show true meaning:

- ▶ Gestures
- ▶ Tonality
- ▶ Posture
- ▶ Eye movement
- ▶ Breathing

How does being attentive to BMIRS help us listen more clearly?



Debriefing the BMIRS

- ▶ Share with your observations with your partners.
 - Which BMIRS were you aware of?
 - Did the BMIRS mirror the meaning of your spoken words?
- ▶ How will attentiveness to BMIRS assist you as work with your colleagues?

Building Rapport

The key to establishing rapport is an ability to enter another person's world by assuming a similar state of mind.

- ▶ Posture
- ▶ Gesture
- ▶ Tonality
- ▶ Language
- ▶ Breathing

Be mindful of their BMIRS!



Experiment with BMIRS & Rapport

- ▶ **Partner-up and sit in rapport**
- ▶ **Person #1 has 2 minutes to talk about:**
 - “Some strong feelings I’ve been having about work lately...” or
 - “A highpoint of this week...” or
 - “A place of peace...”
- ▶ **Person #2 cannot talk... just listen and observe**
- ▶ **Person #2 paraphrases, restates content and reflects feelings. (So, you’re feeling...)**
- ▶ **Person #1 confirm or clarify the paraphrase**
- ▶ **Person #2 share BMIRS observations & debrief**
- ▶ **Switch**

Section II

- ▶ SMP implementation artifacts

Digging Deeper

- ▶ We've debriefed your impressions of your "roll out"
- ▶ Let's examine your artifacts.

Grouping the SMPs

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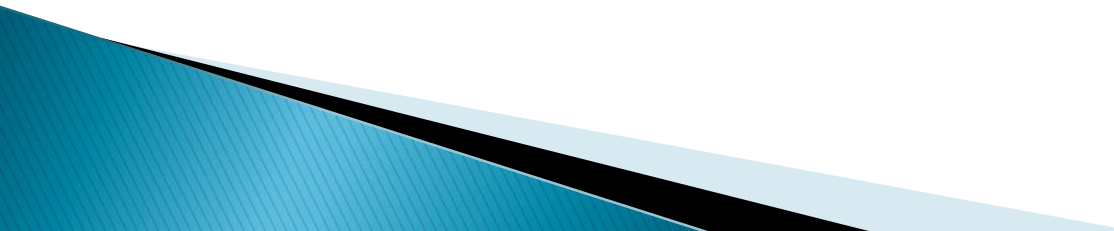
8. Look for and express regularity in repeated reasoning.

Reasoning and explaining

Modeling and using tools

Seeing structure and generalizing

Tweet It!

- ▶ Summarize the essential student learning and suggested teacher practice inherent in each of the following SMPs using 140 characters (get as close as you can without going over).
 - SMP 1: Make sense of problems and persevere in solving them
 - SMP 6: Attend to precision
 - SMP 2: Reason abstractly and quantitatively
 - SMP 3: Construct viable arguments and critique the reasoning of others
- 

Examining Artifacts

In mixed groups, share your artifacts and chart your responses to the following questions:

- ▶ What do you see? (no judgments, just what you see)
- ▶ What questions does this raise for you?
- ▶ What is significant about this? (for teachers and/or students)

Adapted from “Make Meaning Protocol”



**Be the change you
want to see....**

in education



Planning for continued support

- ▶ Action planning:
 - How will you continue to “lead from the middle”?
 - What exactly will it look like?
 - What is the frequency and timeframe of this?
 - What will successful look like?
 - What support or resources will you need to be successful?
 - How will you address anticipated challenges?
- ▶ If I commit to _____, then I will see _____.

Thank you

- ▶ Next session January 28, 2013:
 - SMP #4 Model with mathematics
 - SMP #5 Use appropriate tools strategically
 - Questioning and paraphrasing skills

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